

THE ACCUMULATION OF RADIONUCLIDES IN THE SEDIMENTS OF THE RUSSIAN ARCTIC SEAS

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Radioactive pollution of marine ecosystems is one of the most dangerous anthropogenic impacts on the biota. Various areas of Russian Arctic seas such as Novaya Zemlya, Yenisei Gulf and Ob Gulf were exposed to significant emission of radioactive nuclides. Especially dangerous is the accumulation of radionuclides by marine sediments. Marine sediments do not only have the ability to accumulate various substances, including toxicants, but also can be a secondary source of pollution. Accumulation of radioactive isotopes in sediments contributes to the process of bioaccumulation of benthic organisms which leads to further deterioration of living conditions of all groups of aquatic organisms, causing a breach of the vital functions of organisms. According to recent data the accumulation coefficient of radiocaesium by benthic organisms in the Barents and Kara seas is higher than the average data. The purpose of this research study is to identify the characteristics of marine sediments, which determine the accumulation of different radionuclides as result of statistical analyses. The main attention is paid to the accumulation of radionuclides from the data on grain size and component-wise composition of sediments. Maps of spatial distribution of cesium-137, kalium-40 and radium-226 concentrations in sediments of Russian Arctic seas are given.